

A REVIEW OF THE GENUS *Microweisea* COCKERELL WITH A
DESCRIPTION OF A NEW GENUS AND SPECIES OF COCCINELLIDAE
FROM NORTH AMERICA
(COLEOPTERA)

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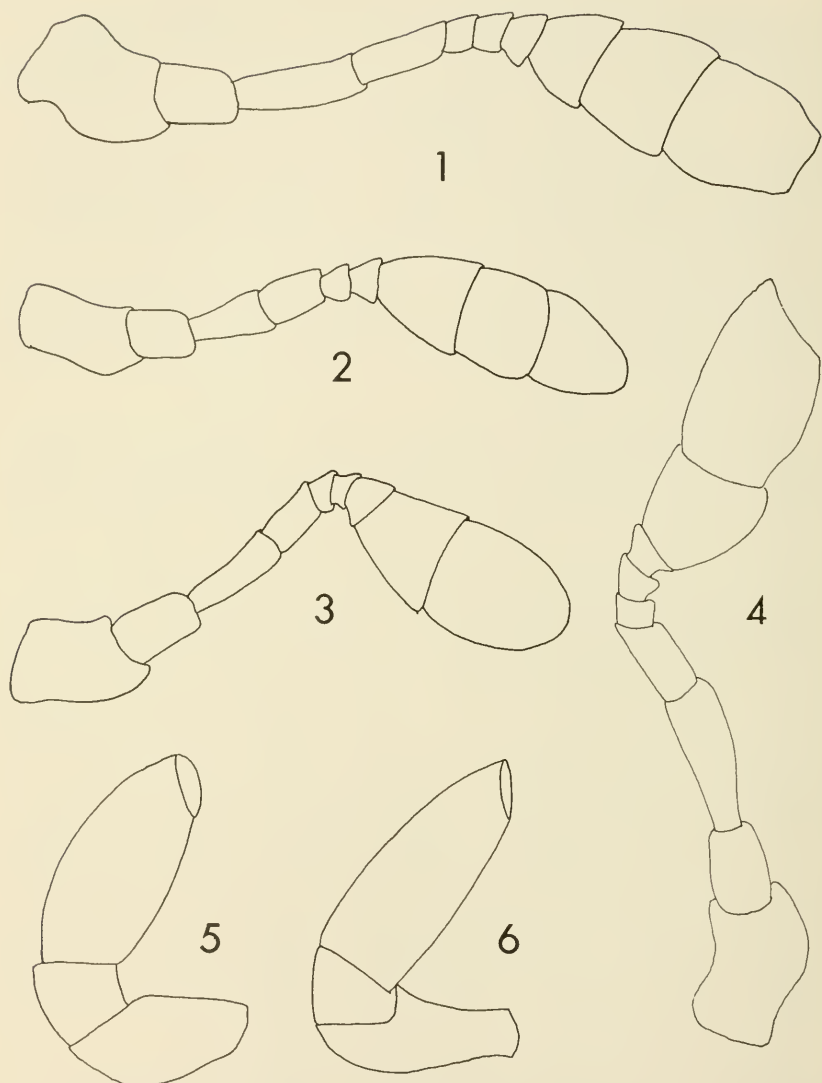
ABSTRACT—A review of the genus *Microweisea* is presented with a key to species and illustrations. Two species, *marginata* (LeConte) and *atronitens* (Casey), are transferred from *Microweisea* to a new genus, *Cryptoweisea*, and a new species, *C. peninsularis*, is described. A key to the genera of North American Sticholotini is also included.

The genus *Microweisea* Cockerell belongs to the tribe Sticholotini (Pharini) and is apparently confined to North America, with closely related genera occurring in both North and South America. Casey (1899) was the last to review *Microweisea* (*Smilia*), discussing seven species, one of which has been transferred to *Gnathoweisea* Gordon (1970). Fall (1901) described a single species which has since been placed in synonymy, and Schwarz (1904) described one species. Pope (1962), in a review of the "Pharini," gives a synopsis of the generic synonymy of *Microweisea* and makes the following statement: "Horn (1895) first noted that the North American species assigned to *Pentilia* were properly included in *Smilia* Weise. He recorded *Smilia* as a junior synonym of *Pentilia*, originating the error, noted and corrected by Casey (1899), but followed by the Junk catalogue." Horn did not place *Smilia* as a junior synonym of *Pentilia*; he merely removed the North American species from *Pentilia* and placed them in *Smilia*. Casey simply followed Horn. Sasaji (1968) proposed a new classification of the Coccinellidae in which *Microweisea* and related genera were placed in the subfamily Sticholotinae and tribe Sticholotini. As pointed out by Sasaji, the tribal name Pharini can not be used since the generic name *Pharus* is a homonym.

During the study of *Microweisea* it was noted that two of the North American species apparently belonged to the South American genus *Coccidophilus* Brèthes (1955). Differences were observed however, and a new genus is proposed for those two species.

Thanks are due John Lawrence, Museum of Comparative Zoology, for loan of LeConte and Fall types, and Hugh Leech, California Academy of Sciences, for the loan of specimens.

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Figs. 1-4, antennae: 1, *Microweisea* sp.; 2, *Gnathoweisea* sp.; 3, *Coccidophilus* sp.; 4, *Cryptoweisea* sp. Figs. 5, 6, maxillary palpi: 5, *Cryptoweisea* sp.; 6, *Coccidophilus* sp.

KEY TO THE GENERA OF NORTH AMERICAN STICHOLOTINI

1. Antenna 10-segmented (fig. 1) **Microweisea** Cockerell
 Antenna 9-segmented- 2
2. Antennal club 3-segmented (fig. 2); clypeus and frontal area of head extremely prolonged, parallel-sided **Gnathoweisea** Gordon

Antennal club 2-segmented (fig. 4); clypeus and frontal area of head not extremely prolonged, not parallel-sided **Cryptoweisea**, n. gen.

Microweisea Cockerell

(Fig. 1)

Microweisea Cockerell, 1903, p. 38. New name for *Epismilia* Cockerell, 1900.

Type species *Smilia felschei* Weise, a synonym of *Pentilia ovalis* LeConte.

Smilia Weise, 1891 (not Germar, 1833), p. 288.

Epismilia Cockerell, 1900 (not Fromental, 1861), p. 606. New name for *Smilia* Weise, 1891.

Pseudoweisea Schwarz, 1904, p. 118. Name proposed in error.

Elongate-oval; surface nearly glabrous, a few short indistinct hairs present. Head slightly elongate; clypeus suddenly expanded in front of antennae; antenna 10-segmented, club 3-segmented (fig. 1); maxillary palpus with apical segment conical. Pronotum with an oblique line across the anterior angle. Prosternum with anterior margin slightly lobed. Abdomen with 6 visible sterna; first abdominal sternum with postcoxal lines nearly reaching hind margin of sternum, not extending laterally. Male genitalia broadly flattened laterally, asymmetrical; parameres with a group of setae apically, right paramere elongate, left paramere short; siphon narrowed at apical two-thirds, apical one-fifth slightly thickened.

KEY TO SPECIES OF **Microweisea**

1. Elytra light yellowish brown, suture piceous; head and pronotum piceous;
California **suturalis** (Schwarz)
Elytra yellow to black or bicolored; head and pronotum concolorous with
elytra or nearly so 2
2. Dorsal and ventral surfaces piceous to black 3
Dorsal surface yellow to brown or bicolored; ventral surface yellow to brown;
southeastern U. S. 4
3. Length 0.90 mm. or less; pronotum weakly alutaceous, punctures not distinct
..... **minuta** (Casey)
Length usually 0.95 mm. or more; pronotum strongly alutaceous, distinctly
punctured **misella** (LeConte)
4. Elytra dark brown with a transverse yellow band across middle, or a yellow
spot on each elytron; elytral punctures shallow, fine **coccidivora** (Ashmead)
Elytra light brown, suture piceous; elytral punctures deep, coarse
..... **ovalis** (LeConte)

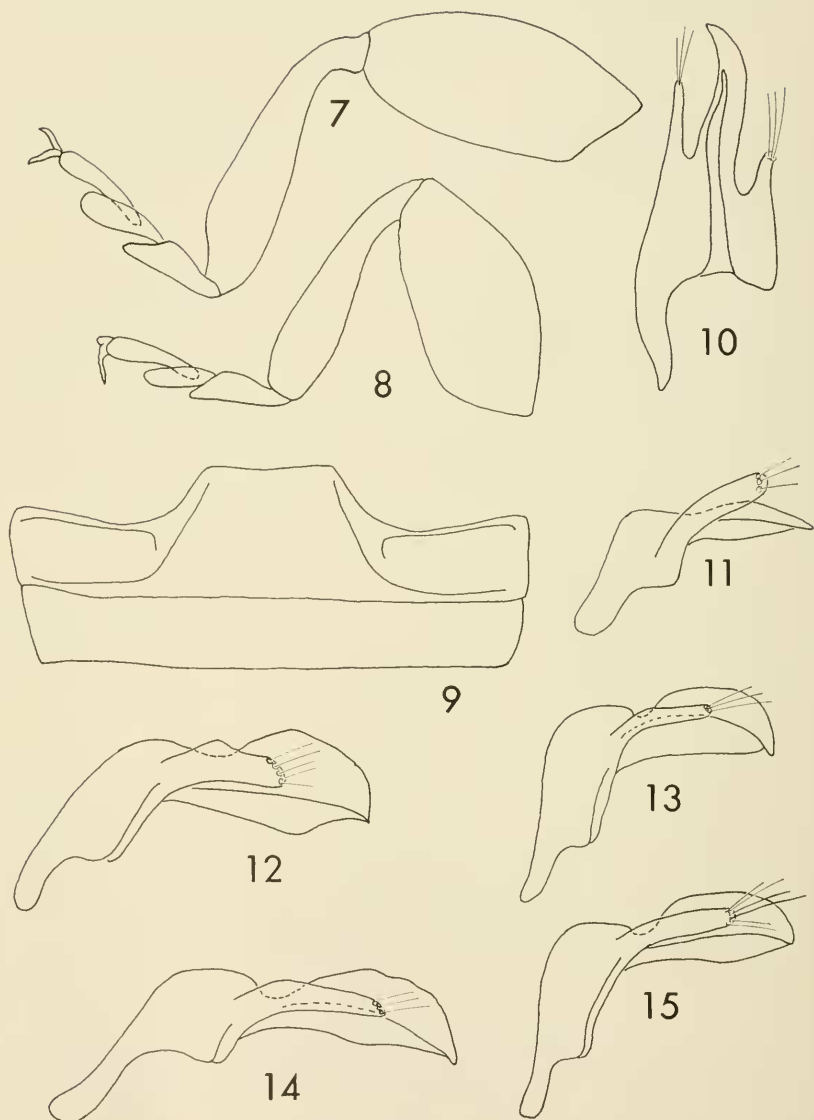
Microweisea suturalis (Schwarz)

(Figs. 10, 12)

Pseudoweisea suturalis Schwarz, 1904, p. 118.

Microweisea suturalis: Leng, 1920, p. 213.

Male and female.—Length 1.00 to 1.10 mm., width 0.90 to 0.95 mm. Piceous, elytra yellowish brown, suture piceous, underside brown. Head alutaceous, indistinctly punctured; pronotum alutaceous, very finely regularly punctured; elytra shining, coarsely unevenly punctured; underside shining medially, alutaceous laterally, abdominal sterna alutaceous, indistinctly punctured. Male



Figs. 7, 8, prolegs: 7, *Cryptoweisea* sp.; 8, *Coccidophilus* sp. Fig. 9, first two abdominal sterna, *Cryptoweisea* sp. Figs. 10-15, ♂ genitalia: 10, *Microgaster suturalis* (Sch.), phallobase, ventral; 11, *M. minuta* (Casey), phallobase, lateral; 12, *M. suturalis*, phallobase, ventral; 13, *M. coccidivora* (Ashm.), phallobase, lateral; 14, *M. misella* (Lec.), phallobase, lateral; 15, *M. ovalis* (Lec.), phallobase, lateral.

genitalia with basal lobe short, broad; right paramere bluntly angulate on upper margin (figs. 10, 12).

Variation.—Color of the head and pronotum nearly black and the elytra reddish brown in some specimens, the undersurface varying from brown to yellowish brown.

Type depository.—U. S. National Museum.

Type locality.—California, Long Beach.

Distribution.—California.

This species has been recorded as being an efficient predator of the San Jose Scale in California. It is easily distinguished by the characteristic color pattern and distribution.

***Microweisea minuta* (Casey)**

(Fig. 11)

Smilia minuta Casey, 1899, p. 135.

Epismilia minuta: Cockerell, 1900, p. 606.

Microweisea minuta: Cockerell, 1903, p. 38.

Pentilia caseyi Korschefsky, 1931, p. 223. New name for *minuta* Casey.

Male and female.—Length 0.85 to 0.88 mm., width 0.55 to 0.60 mm. Piceous, underside slightly paler. Head shining, indistinctly punctured; pronotum alutaceous, very finely punctured; elytra shining, coarsely unevenly punctured; underside shining medially, alutaceous laterally, abdominal sterna alutaceous, indistinctly punctured. Male genitalia with basal lobe slender; right paramere broad, extending above basal lobe (fig. 11).

Variation.—No variation observed in the 4 specimens available for study.

Type depository.—U. S. National Museum.

Type locality.—Texas.

Distribution.—Texas; Brownsville, San Diego, Sinton.

This species is very similar externally to small specimens of *M. misella* (Lec.), but the male genitalia are quite different. No host data are available.

Korschefsky (1931) erroneously considered *Microweisea* to be a synonym of *Pentilia* and proposed the name *M. caseyi* to replace the preoccupied *minuta*. *Pentilia* and *Microweisea* are distinctly separate genera as indicated by Horn (1895) and Casey (1899) and *minuta* is not preoccupied.

***Microweisea misella* (LeConte)**

(Fig. 14)

Pentilia misella LeConte, 1878, p. 400.

Smilia misella: Horn, 1895, p. 82.

Epismilia misella: Cockerell, 1900, p. 606.

Microweisea misella: Cockerell, 1903, p. 38.

Male and female.—Length 0.98 to 1.45 mm., width 0.70 to 1.05 mm. Color entirely piceous, including legs. Head alutaceous, nearly impunctate; pronotum

alutaceous, finely distinctly punctured; elytra shining, coarsely unevenly punctured; shining medially, alutaceous laterally, abdominal sterna alutaceous, impunctate. Male genitalia with basal lobe broad; right paramere narrow, slightly angulate on dorsal margin (fig. 14).

Variation.—Specimens from Alabama and Louisiana tend to be smaller than average and black in color. Specimens from Texas are also smaller than average but piceous or dark brown. A series from Idaho had the pronotal and elytral punctures deeper and coarser than usual, and a series from Hoquiam, Washington, averages 1.44 mm. in length and 1.05 mm. in width which are by far the largest measurement observed.

Type depository.—Museum of Comparative Zoology, Harvard University.

Type locality.—Washington, D. C.

Distribution.—Entire U. S. and southern Canada.

Teneral specimens of *misella* may be confused with *ovalis*. The coarser elytral punctures of *ovalis* will usually separate them and *ovalis* is noticeably narrower and more elongate.

This species is commonly recorded as feeding on San Jose Scale.

***Microweisea coccidivora* (Ashmead)**

(Fig. 13)

Hyperaspidius coccidivora Ashmead, 1880, p. 10.

Smilia coccidivora: Horn, 1895, p. 82.

Epismilia coccidivora: Cockerell, 1900, p. 606.

Microweisea coccidivora: Cockerell, 1903, p. 38.

Male and female.—Length 0.80 to 1.00 mm., width 0.60 to 0.70 mm. Yellowish red, elytral base and apex dark brown, transverse median area yellowish brown, underside and legs yellowish brown. Head alutaceous, faintly punctured; pronotum alutaceous, faintly punctured; elytra shining, punctures shallow, irregular; underside shining medially, alutaceous laterally, abdominal sterna alutaceous, impunctate. Male genitalia with basal lobe broad, tip bent abruptly downward, bluntly pointed; right paramere narrow (fig. 13).

Variation.—The yellow band across the elytra is often reduced to a single spot on each elytron, or it may be so wide that it occupies three-fourths of the elytra.

Type depository.—Neotype, U. S. National Museum (70409).

Type locality.—Florida, Orlando.

Distribution.—Florida; Georgia.

The distinctive color pattern makes this species easily recognizable. It is apparently fairly commonly collected in Florida and has been recorded as feeding on Purple Scale and San Jose Scale.

Ashmead (1880) did not designate a type specimen or series and the specimens he examined cannot be found. I have selected a specimen from Orlando, Florida, as a neotype.

***Microweisea ovalis* (LeConte)**
(Figs. 15, 18)

Pentilia ovalis LeConte, 1878, p. 400.

Smilia felschei Weise, 1891, p. 288; Horn, 1895, p. 82.

Smilia ovalis: Horn, 1895, p. 82.

Epismilia ovalis: Cockerell, 1900, p. 66.

Microweisea ovalis: Cockerell, 1903, p. 38.

Male and female.—Length 0.95 to 1.05 mm., width 0.50 to 0.63 mm. Brown, elytral suture piceous, anterior angles of pronotum, underside and legs yellowish brown. Head alutaceous, impunctate; pronotum alutaceous, very finely punctured; elytra shining, punctures coarse and deep; underside shining medially, alutaceous laterally, abdominal sterna alutaceous, indistinctly punctured. Male genitalia with basal lobe broad, tip blunt; right paramere narrow (fig. 15); siphon constricted in apical one-fourth (fig. 18).

Variation.—Color varies from brown to nearly yellow in teneral specimens.

Type depository.—Museum of Comparative Zoology, Harvard University.

Type locality.—Florida.

Distribution.—Florida.

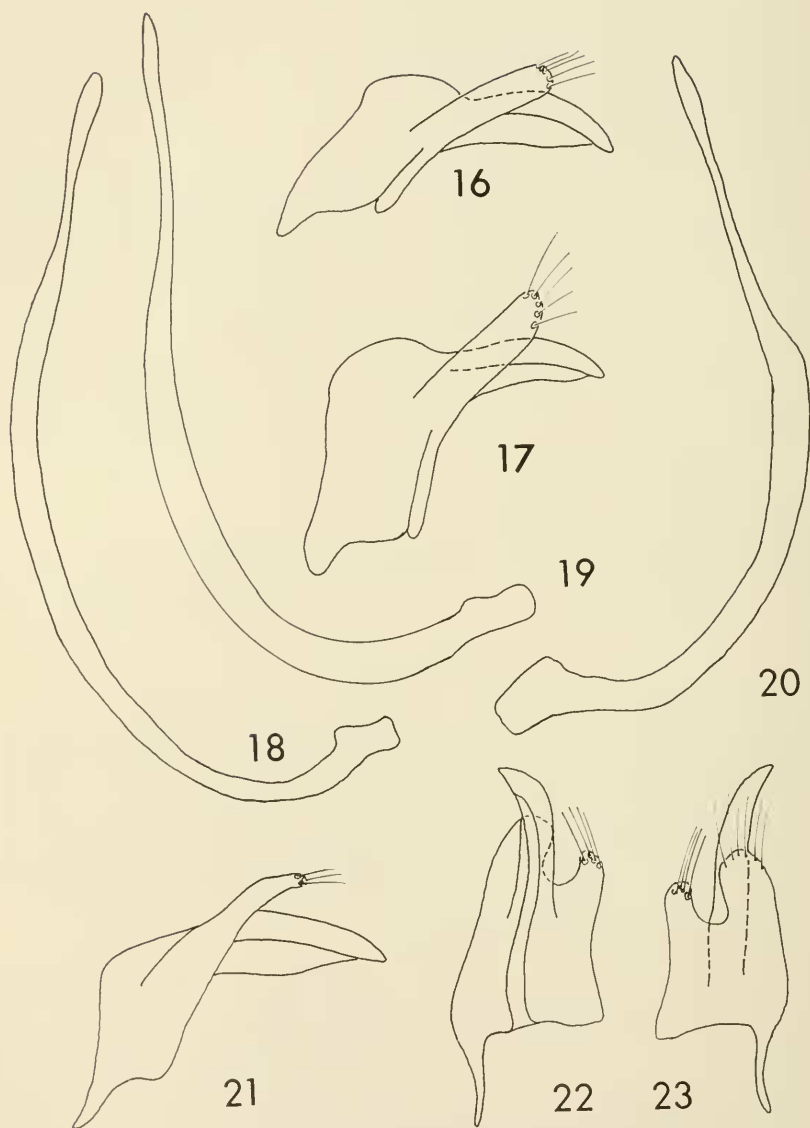
This species is a trifle narrower and more elongate than any of the other members of the genus. The general appearance is quite similar to *suturalis* (Schwarz).

***Cryptoweisea*, n. gen.**
(Figs. 4, 5, 7, 9)

Elongate-oval; surface with short sparse hairs. Head slightly elongate, front with two depressions between the eyes; clypeus suddenly expanded in front of antennae; antenna 9-segmented, club 2-segmented (fig. 4); maxillary palpus with apical segment conical, thickened (fig. 5). Pronotum with an oblique line across the anterior angle. Prosternum with anterior margin slightly lobed. Front and middle legs with tibiae obtusely angulate at apical one-fourth (fig. 7). Abdomen with 6 sterna; first sternum with postcoxal lines nearly reaching hind margin of sternum, extending outward nearly to lateral margin (fig. 9).

Type-species.—*Pentilia marginata* LeConte.

The 9-segmented antenna with 2-segmented club places this genus near the South American genus *Coccidophilus*, but comparison with specimens of *Coccidophilus* reveals several differences. *Coccidophilus* has the last segment of the antennal club rounded, truncate, or slightly angulate (fig. 3); last segment of maxillary palpus narrow, sides nearly parallel (fig. 6); front and middle tibiae not angulate or thickened at apical one-fourth (fig. 8); postcoxal lines extending nearly to hind margin of the first abdominal sternum, usually not extending farther than one-half the distance to the lateral margin. *Cryptoweisea* has the last segment of the antennal club strongly angulate (fig. 4); last segment of maxillary palpus oval, sides rounded



Figs. 16-23, ♂ genitalia: 16, *Cryptoweisea atronitens* (Casey), phallobase, lateral; 17, *C. marginata* (Lec.), phallobase, lateral; 18, *Microweisea ovalis* (Lec.), siphos, lateral; 19, *C. atronitens*, siphos, lateral; 20, *C. peninsularis*, n. sp., siphos, lateral; 21, *C. peninsularis*, phallobase, lateral; 22, 23, *C. peninsularis*, phallobase, ventral, dorsal.

(fig. 5); front and middle tibiae angulately thickened at apical fourth (fig. 7); postcoxal lines extending nearly to hind margin of the first abdominal sternum, then outward nearly to lateral margin (fig. 9). The femur is noticeably shorter and thicker in *Coccidophilus* than in *Cryptoweisea* (figs. 7, 8).

KEY TO SPECIES OF *Cryptoweisea*

1. Oblique line across anterior pronotal angle not joining lateral margin, visible to posterior margin; southwestern U. S. and Baja California 2
- Oblique line across anterior pronotal angles joining lateral margin, not visible to posterior margin; northern and eastern U. S. **marginata** (LeConte)
2. Elytral punctures fine, equal to or finer than pronotal punctures **atronitens** (Casey)
- Elytral punctures coarse, 2 or 3 times as large as pronotal punctures **peninsularis**, n. sp.

Cryptoweisea atronitens (Casey), n. comb. (Figs. 16, 19)

Smilia atronitens Casey, 1899, p. 135.

Epismilia atronitens: Cockerell, 1900, p. 606.

Microweisea atronitens: Cockerell, 1903, p. 38.

Smilia reversa Fall, 1902, p. 231; Leng, 1920, p. 213.

Male and female.—Length 1.10 to 1.20 mm., width 0.90 to 0.95 mm. Dark brown, epipleura and legs slightly paler. Head alutaceous, punctured, two large depressions on front between eyes; pronotum shining, minutely punctured; elytra shining, finely sparsely punctured; underside shining medially, alutaceous laterally, abdominal sterna alutaceous, indistinctly punctured. Male genitalia with basal lobe slender, bluntly pointed; right paramere extending above basal lobe (fig. 16); siphon narrowed throughout apical one-third (fig. 19).

Variation.—The elytra are often light brown, the suture, pronotum and head being noticeably darker. Some Arizona and New Mexico specimens have the pronotal punctures noticeably coarser than the typical form from California.

Type depository.—U. S. National Museum.

Type locality.—California, Siskiyou Co.

Distribution.—Arizona; California; Colorado; New Mexico; Oregon; Utah; Washington.

Cryptoweisea marginata (LeConte), n. comb. (Fig. 17)

Pentilia marginata LeConte, 1878, p. 400.

Smilia marginata: Horn, 1895, p. 82.

Epismilia marginata: Cockerell, 1900, p. 606.

Microweisea marginata: Cockerell, 1903, p. 38.

Male and female.—Length 1.20 to 1.25 mm., width 0.90 to 1.00 mm. Light brown, epipleura slightly paler. Head alutaceous, punctured, two large depres-

sions on front between eyes; pronotum shining, finely densely punctured; elytra shining, coarsely densely punctured; underside shining medially, alutaceous laterally, abdominal sterna alutaceous, indistinctly punctured. Male genitalia with basal lobe slender, bluntly pointed; right paramere broad, extending above basal lobe, posterior margin straight (fig. 17).

Variation.—The elytra are often noticeably paler than the head and pronotum. Some specimens have the legs nearly piceous, darker than the underside.

Type depository.—Museum of Comparative Zoology, Harvard University.

Type locality.—Michigan, Marquette.

Distribution.—Maine; Michigan; New York.

C. marginata (LeConte) has been reported from the Pacific Northwest, but all specimens I have examined from that area thus far have proven to be *M. misella* (LeConte), or *C. atronitens* (Casey).

The depressions on the front are noticeably deeper in *marginata* than in *atronitens*, and *marginata* has the elytra and pronotum much more coarsely and densely punctured.

***Cryptoweisea peninsularis*, n. sp.**

(Figs. 20, 21, 22, 23)

Holotype male.—Length 1.20 mm., width .87 mm. Brown, legs and entire ventral surface yellowish brown. Head alutaceous, finely punctured; pronotum shining, faintly alutaceous, finely sparsely punctured, lateral margins slightly reflexed, oblique line across anterior angle not joining lateral margin, visible to base; elytra shining, not alutaceous, coarsely densely punctured, punctures 2 or 3 times as large as pronotal punctures; underside shining medially, alutaceous laterally, abdominal sterna alutaceous, faintly punctured. Genitalia with basal lobe slender, bluntly pointed; right paramere broad, apex rounded, extending above basal lobe (figs. 21, 22, 23); siphon abruptly narrowed at apical one-third (fig. 20).

Variation.—Length ranges from 1.19 to 1.36 mm., width from .85 to 1.00 mm. Some specimens have the pubescence more noticeable than others. The pubescence is always very short, erect and sparse.

Holotype.—Cedros Id., Lower Cal., June 5, 1925, H. H. Keifer collector (California Academy of Sciences).

Paratypes.—Same data as holotype, 58 deposited in California Academy of Sciences, 4 deposited in USNM collection.

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TRIBAL AND GENERIC REASSIGNMENTS IN THE COCCINELLIDAE (COLEOPTERA)

Examination of the type specimen of *Microweisea ovata* Nunenmacher has revealed that it is a member of the genus *Microscymnus* Champion and is distinct from the only previously described species, *M. calvus* Champion. *Microscymnus* has previously been placed in the Scymnini. Study of specimens of *M. ovata*, *M. calvus* and 2 undescribed species reveal the following characters: expanded prosternal process, conical maxillary palpus, expanded protibia, ventral excavations for reception of legs, and abdomen with 5 visible sternites. These characters place *Microscymnus* near the Serangini in the Sticholotinae. *Microscymnus* is a Central and South American genus. The type of *M. ovata* was loaned by H. B. Leech, California Academy of Sciences.

Among material from the British Museum (Natural History) kindly loaned by R. D. Pope, was a syntype of *Scymnus caeruleicollis* Champion. This proved to belong to the genus *Zilus* Mulsant. This species is apparently not uncommon in Panama as there are several conspecific specimens in the U. S. National Museum of Natural History.

The South Pacific genus *Pharellus* Sicard should be placed in the Sticholotinae based on the conical maxillary palpus, divided postcoxal line, and asymmetrical male genitalia. *Pharellus* appears to be very near *Sukunahikona* Kamiya, but they are not congeneric.—ROBERT D. GORDON, Systematic Entomology Laboratory, Ent. Res. Div., Agr. Res. Ser., USDA, c/o U. S. National Museum, Washington, D. C. 20560.